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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/608,117

06/30/2003

Jae-Yong Park

041993-5225

7943

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7590

11/19/2004

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EXAMINER

ZIMMERMAN, GLENN

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/608,117

Applicant(s)

PARK ET AL.

Examiner

Glenn Zimmerman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 14-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 20, 21, 23-27, 29 and 30 is/are rejected.
- 7) ☒ Claim(s) 8, 22 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

The applicants argues that the alternative method is not plausible and that claim 14 has sufficient scope. The examiner maintains the restriction as the alternative method just has to be able to make the product. They don't have to be a better alternative method or a more likely used method, but a working method. Plausible means likely. Whether or not the alternative methods presented by the examiner are likely or less likely to be chosen to make the product, they still can make the product. The examiner acknowledges the applicants election of Group I claims 1-13 and 20-30.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitations of claims 2, 3 and claim 9 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

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and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 22 is objected to because of the following informalities: The examiner notes that you skipped using claim 22. The examiner suggests in the response a canceling of claim 22. Appropriate correction is required.

Claim Rejections - 35 USC § 112

Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 mentions "the desiccant film" lacks antecedent basic.

A 112 2nd paragraph rejection has been determined for claim 8, as written about above. However, a further evaluation of the claim will be done while interpreting "claim 1" in line 1 as "claim 7".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 6, 9, 20, 26 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsuura et al. U.S. Patent 6,175,186.

Regarding claim 1, Matsuura et al. Disclose an organic electroluminescence device (title) comprising:

A first substrate (Fig. 2 ref. 2); a first electrode layer (ref. 3) formed over the first substrate ;

An organic light emitting layer (ref. 5) formed over the first substrate;

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A second electrode layer (ref. 4) formed over the organic light emitting layer;

A second substrate (ref. 7);

A seal pattern (ref. 8) on an outer portion of the first substrate or the second substrate for forming a cell gap between the two substrates and for attaching the two substrates; and

A plurality of cell gap maintaining structures (ref. 14 or 9) located between the first substrate and the second substrate within the seal pattern.

Regarding claim 6, Matsuura et al. Disclose the device of claim 1, wherein the cell gap maintaining structure are arranged discontinuously (Fig. 1 or 2 ref. 14, 9; Fig. 11 ref. 14).

Regarding claim 9, Matsuura et al. Disclose the device of claim 1, wherein the height of the cell gap maintaining structure is lower than the cell gap between the first substrate and the second substrate (Fig. 1 and 2 ref. 14). One can see that ref. 8 creates the cell gap and is the cell gap height and that ref. 9 has less height than ref. 8.

Regarding claim 20, Matsuura et al. Disclose an organic electroluminescence device comprising :

A first substrate (Fig. 2 ref. 2);

A first electrode layer (ref. 3) formed over the first substrate;

An organic light emitting layer (ref. 5) formed over the first substrate;

A second electrode layer (ref. 4) formed over the organic light emitting layer;

A second substrate (ref. 7);

A seal pattern (ref. 8) on an outer portion of the first substrate or the second substrate for forming a cell gap between the two substrates and for attaching the two substrates; and

A means for maintaining a cell gap (ref. 14 or 9) located between the first substrate and the second substrate within the seal pattern.

Regarding claim 26, Matsuura et al. Disclose the device of claim 20, wherein the means for maintaining a cell gap is arranged discontinuously (Fig. 1 or 2 ref. 14, 9; Fig. 11 ref. 14) on at least one of the first and second substrates.

Regarding claim 29, Matsuura et al. Disclose the device of claim 20, wherein a height of the means for maintaining a cell gap is lower than the cell gap between the first substrate and the second substrate (Fig. 1 and 2 ref. 14). One can see that ref. 8 creates the cell gap and is the cell gap height and that ref. 9 has less height than ref. 8.

Claims 1, 5, 10, 20, 25 and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamazaki et al. U.S. Patent Application Publication 2002/0180371 A1.

Regarding claim 1, Yamazaki et al. disclose an organic electroluminescence device (Fig. 4 ref. 106) comprising :

A first substrate (ref. 100); a first electrode layer (ref. 103) formed over the first substrate;

An organic light emitting layer (ref. 104) formed over the first substrate;

A second electrode layer (ref. 105) formed over the organic light emitting layer;

A second substrate (ref. 101);

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A seal pattern (ref. 102 with ref. 134 at edge) on an outer portion of the first substrate or the second substrate for forming a cell gap between the two substrates and for attaching the two substrates; and

A plurality of cell gap maintaining structures (ref. 134 internal to edge ref. 134) located between the first substrate and the second substrate within the seal pattern.

Regarding claim 5, Yamazaki et al. disclose the device of claim 1, wherein the cell gap maintaining structure is made of an organic material (paragraph 102).

Regarding claim 10, Yamazaki et al. disclose the device of claim 1, wherein the height of the cell gap maintaining structure is same as the cell gap between the first substrate and the second substrate. The cell gap is the gap created by ref. 134 on the far edge with 102, which is the seal pattern height. One can see that the reference 134's internal from the edge are the same height as the 134 at the edge. Therefore the height of the cell gap maintaining structure is same as the cell gap between the first substrate and the second substrate. Also cell gap can be relatively interpreted.

Regarding claim 20, Yamazaki et al. Disclose an organic electroluminescence device comprising :

A first substrate (ref. 100);

A first electrode layer (ref. 103) formed over the first substrate;

An organic light emitting layer (ref. 104) formed over the first substrate;

A second electrode layer (ref. 105) formed over the organic light emitting layer;

A second substrate (ref. 101);

A seal pattern (ref. 102 with ref. 134 at edge) on an outer portion of the first substrate or the second substrate for forming a cell gap between the two substrates and for attaching the two substrates; and

A means for maintaining a cell gap (ref. 134 internal to edge ref. 134 located between the first substrate and the second substrate within the seal pattern.) located between the first substrate and the second substrate within the seal pattern.

Regarding claim 25, Yamazaki et al. disclose the device of claim 20, wherein the means for maintaining a cell gap is made of an organic material (paragraph 102).

Regarding claim 30, Yamazaki et al. disclose the device of claim 20, wherein the height of the means for maintaining a cell gap is same as the cell gap between the first substrate and the second substrate. One can see that the reference 134's internal from the edge are the same height as the 134 at the edge. Therefore the height of the cell gap maintaining structure is same as the cell gap between the first substrate and the second substrate. Also cell gap can be relatively interpreted.

Claims 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Ogawa Japanese Patent Abstract 2001-076886.

Regarding claim 11, Ogawa disclose an organic electroluminescence device comprising:

An organic light emitting substrate (Fig. 3a ref. 2) on which an organic light emitting layer (ref. 5b) is formed to output the light according to signal application;

An encapsulating substrate (ref. 11a) attached with the organic light emitting substrate for protecting the organic light emitting substrate; and

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A cell gap maintaining structure (ref. 14) located between the organic light emitting substrate and the encapsulating substrate for maintaining the gap between the organic light emitting substrate and the encapsulating substrate.

Regarding claim 12, Ogawa disclose the device of claim 11, wherein the cell gap maintaining structure is an organic pattern (Drawing 1 ref. 14 acrylic spacer)

Claim 11 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi et al. U.S. Patent 5,804,917.

Regarding claim 11, Takahashi et al. disclose an organic electroluminescence device (title) comprising:

An organic light emitting substrate (ref. 3) on which an organic light emitting layer (ref. 6) is formed to output the light according to signal application;

An encapsulating substrate (ref. 1) attached with the organic light emitting substrate for protecting the organic light emitting substrate; and

A cell gap maintaining structure (ref. 8) located between the organic light emitting substrate and the encapsulating substrate for maintaining the gap between the organic light emitting substrate and the encapsulating substrate.

Regarding claim 13, Takahashi et al. disclose the device of claim 11, wherein the cell gap maintaining structure is formed as a stripe (ref. 8 ribs).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 20, 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukunaga et al. U.S. Patent 6,559,594 in view of Matsuura et al. U.S. Patent 6,175,186.

Regarding claim 1, Fukunaga teaches an organic electroluminescence device (Fig. 2A ref. 210) comprising a first substrate (ref. 201); a first electrode layer (ref. 207b) formed over the first substrate; an organic light emitting layer (ref. 209-211) formed over the first substrate; a second electrode layer (ref. 212 or 213) formed over the organic light emitting layer; a second substrate (ref. 214); a seal pattern (col. 4 line 51); and a plurality of cell gap maintaining structures (ref. 215) located between the first substrate and the second substrate, but fails to teach the seal pattern on an outer portion of the first substrate or the second substrate for forming a cell gap between the two substrates and for attaching the two substrates. Matsuura et al. in the analogous art teaches the seal pattern on an outer portion of the first substrate or the second substrate for forming a cell gap between the two substrates and for attaching the two substrates (ref. 8). Additionally, Matsuura et al. teaches incorporation of such a sealing portion on an outer portion to improve the sealing of the substrates and the sealing area is outside the display area (Fig. 1 and 2).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use a seal pattern on an outer portion of the first substrate or the second substrate forming a cell gap between the two substrates and for attaching the two substrates in the display of Fukunaga, since such a modification would improve the sealing of the substrates and the sealing area is outside the display area as taught by Matsuura et al.

Regarding claim 2, Fukunaga et al. disclose the device of claim 1 further comprising a passivation layer formed on the upper part (ref. 216) of the second electrode layer. One can see that 216 is formed on ref. 212 and 213.

Regarding claim 3, Fukunaga et al. disclose the device of claim 1, wherein the cell gap maintaining structure is formed over the passivation layer (ref. 215).

Regarding claim 20, Fukunaga teaches an organic electroluminescence device (Fig. 2A ref. 210) comprising a first substrate (ref. 201); a first electrode layer (ref. 207b) formed over the first substrate; an organic light emitting layer (ref. 209-211) formed over the first substrate; a second electrode layer (ref. 212 or 213) formed over the organic light emitting layer; a second substrate (ref. 214); a seal pattern (col. 4 line 51); and a means for maintaining a cell gap located between the first substrate and the second substrate within the seal pattern (ref. 215), but fails to teach the seal pattern on an outer portion of the first substrate or the second substrate for forming a cell gap between the two substrates and for attaching the two substrates. Matsuura et al. in the analogous art teaches the seal pattern on an outer portion of the first substrate or the second substrate for forming a cell gap between the two substrates and for attaching the two

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substrates (ref. 8). Additionally, Matsuura et al. teaches incorporation of such a sealing portion on an outer portion to improve the sealing of the substrates and the sealing area is outside the display area (Fig. 1 and 2).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use a seal pattern on an outer portion of the first substrate or the second substrate forming a cell gap between the two substrates and for attaching the two substrates in the display of Fukunaga, since such a modification would improve the sealing of the substrates and the sealing area is outside the display area as taught by Matsuura et al.

Regarding claim 21, Fukunaga et al. disclose the device of claim 20 further comprising a passivation layer formed on the upper part (ref. 216) of the second electrode layer. One can see that 216 is formed on ref. 212 and 213.

Regarding claim 23, Fukunaga et al. disclose the device of claim 20, wherein the means for maintaining a cell gap is formed over the passivation layer (ref. 215).

Claims 4 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuura et al. U.S. Patent 6,175,186 in view of Takase et al. U.S. Patent 6,740,190.

Regarding claim 4, Matsuura teaches all the limitations of claim 4, but fails to teach wherein the cell gap maintaining structure are arranged with predetermined intervals therebetween in longitudinal and transverse directions between the first and second substrates. Takase in the analogous art teaches wherein the cell gap maintaining structure are arranged with predetermined intervals therebetween in longitudinal and transverse directions between the first and second substrates (col. 3

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lines 1,2 and col. 4 lines 1-8 arranged uniformly; col. 6 line 64). Additionally, Takase et al. teaches incorporation of such an arrangement of cell gap maintaining structures in longitudinal and transverse directions to improve uniformity of spacing across the display (col. 4 line 4).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have wherein the cell gap maintaining structure are arranged with predetermined intervals therebetween in longitudinal and transverse directions between the first and second substrates in the display of Matsuura et al., since such a modification would improve uniformity of spacing across the display as taught by Takase et al.

Regarding claim 24, Matsuura teaches all the limitations of claim 24, but fails to teach wherein the means for maintaining a cell gap is arranged with predetermined intervals therebetween in longitudinal and transverse directions between the first and second substrates. Takase in the analogous art teaches wherein the means for maintaining a cell gap is arranged with predetermined intervals therebetween in longitudinal and transverse directions between the first and second substrates (col. 3 lines 1,2 and col. 4 lines 1-8 arranged uniformly; col. 6 line 64). Additionally, Takase et al. teaches incorporation of such an arrangement wherein the means for maintaining a cell gap is arranged with predetermined intervals therebetween in longitudinal and transverse directions between the first and second substrates to improve uniformity of spacing across the display (col. 4 line 4).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have wherein the means for maintaining a cell gap is arranged with predetermined intervals therebetween in longitudinal and transverse directions between the first and second substrates in the display of Matsuura et al., since such a modification would improve uniformity of spacing across the display as taught by Takase et al.

Claims 7 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuura et al. U.S. Patent 6,175,186 in view of Cok et al. U.S. Patent Application Publication 2003/0190763 A1.

Regarding claim 7, Matsuura et al. teaches all the limitations of claim 7, but fails to teach a plurality of desiccant films formed on the second substrate. Cok et al. in the analogous art teach a plurality of desiccant films formed on the second substrate (Fig. 8 ref. 40). Additionally, Cok et al. teaches incorporation of such a plurality of desiccant films formed on the second substrate to improve the structure by allowing a patterned arrangement of desiccant material which additionally performs the function of a black matrix for increasing the contrast of the display (paragraph 6).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use incorporation of such a plurality of desiccant films formed on the second substrate in the display of Matsuura, since such a modification would improve the structure by allowing a patterned arrangement of desiccant material which additionally performs the function of a black matrix for increasing the contrast of the display as taught by Cok et al.

Regarding claim 27, Matsuura et al. teaches all the limitations of claim 27, but fails to teach a plurality of desiccant films formed on the second substrate. Cok et al. in the analogous art teach a plurality of desiccant films formed on the second substrate (Fig. 8 ref. 40). Additionally, Cok et al. teaches incorporation of such a plurality of desiccant films formed on the second substrate to improve the structure by allowing a patterned arrangement of desiccant material which additionally performs the function of a black matrix for increasing the contrast of the display (paragraph 6).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use incorporation of such a plurality of desiccant films formed on the second substrate in the display of Matsuura, since such a modification would improve the structure by allowing a patterned arrangement of desiccant material which additionally performs the function of a black matrix for increasing the contrast of the display as taught by Cok et al.

Allowable Subject Matter

Claim 8 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 8 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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Regarding claim 8, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a device including the combination of all the limitations as set forth in claim 8, and specifically wherein the cell gap maintaining structure is formed on the second substrate except where the desiccant film is formed could not be found elsewhere in prior art.

Regarding claim 28, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a device including the combination of all the limitations as set forth in claim 28, and specifically except where the desiccant film is formed could not be found elsewhere in prior art.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wang et al. U.S. Patent Application Publication 2003/0122476 A1 disclose Housing Structure with Multiple Sealing Layers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenn Zimmerman whose telephone number is (571) 272-2466. The examiner can normally be reached on M-W 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh D Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Glenn Zimmerman



Vip Patel
Primary Examiner
AU 2879